

Work Order ID 75627

75627

Page.1

October-27-11 11:34:05 AM

Item ID: D6009-129

Accept

N9000040100

Setup Start ***NS1***

Revision ID:

Item Name: Crosstube Material

Stop ***NS2***

Start Date: 27/10/2011 Start Qty: 20.00

20

Cust Item ID:

Required Date: 30/01/2013 Req'd Qty: 20.00

20

Customer:

Reference:

Approvals: Process Plan: M.C.5

Date: 11/10/27 Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start ***NR1***

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr

Revision Nbr

D6009

Rev A

100

0.00

100

PURCHASING

Purchasing

Memo

0.00

Purchasing

Issue P/O: 15344

- a) Order as per Dwg D6009
- b) Material: 3.500 x 0.625 wall 7075-T6/T6511 (WW-T-700/7 or QQ-A-225/9 or QQ-A-200/11) seamless aluminum tube
- c) Minimum ultimate tensile strength = 77 ksi
- d) Minimum tensile yield strength = 66 ksi
- e) Tolerance are per ASTM B210 (see details on Dwg D6009)
- f) Material certification required

CG 11/11/03 20

110

Receive & Inspect for Damage & Mat'l Certs

0.00

110

Packaging

Memo

0.00

Packaging

Ensure material certification is attached

11/14/29 (23)

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 75627

75627

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@October 27-11 11:34:05 AM

Item ID: D6009-129

Accept

N9000040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Cross tube Material

Start Date: 09/10/2011 Start Qty: 20.00

20

Cust Item ID:

Required Date: 30/01/2013 Req'd Qty: 20.00

20

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start *NR1*

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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120

QC6- Inspect dimensions to drawing

0.00

120

QC

Memo

0.00

Quality Control

Ensure Material certification comply to Dwg D6009

140

Identify as per dwg & Stock Location: L/C

0.00

140

Packaging

Memo

0.00

Packaging

150

QC21- Final Inspection - Work Order Release

0.00

150

QC

Memo

0.00

Quality Control

DAS
16
0.00

12/10/31

see Attach Dir Sheet.

773

1/6

anm.L
12/10/31

12/11/20

12/11/10

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

October-27-11 11:34:10 AM

Page 1

Work Order ID: 75627

75627

Parent Item: D6009-129

D6009-129

Parent Item Name: Crosstube Material

Start Date: 27/10/2011

Required Date: 30/01/2013

Start Qty: 20.00

Required Qty: 20.00

Comments:

IPP Rev:A01.08.17New IssueSM
alodine DD 10.01.09 verified by:JLM

IPP Rev:B remove

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6009-129P		Purchased	No			110	Each	0.0000	1	20			
D6009-129P									**				
Crosstube Material													

42/128 (22)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

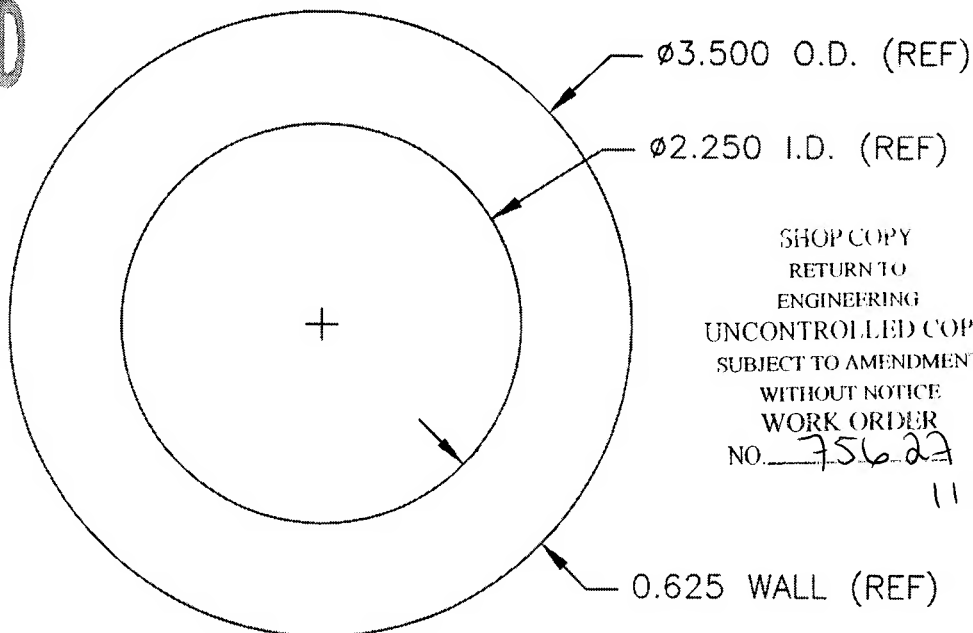
NOTE: Date & initial all entries



DESIGN #	DRAWN BY RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED #	APPROVED #	DRAWING NO. D6009	REV. A SHEET 1 OF 1
DATE 01.08.16		TITLE CROSSTUBE MATERIAL	SCALE 1:1
A	01.08.16	NEW ISSUE	

SPECIFICATION CONTROL DRAWING

RELEASED
01.08.17



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

NO. 75627 M.C.J.
11/10/27

NOTES

- 1) D6009-XXX CROSSTUBE
LENGTH

WHERE XXX IS LENGTH IN INCHES
EG. 129" LONG TUBE: D6009-129

- 2) MATERIAL: 3.500 OD x 0.625 WALL 7075-T6/T6511 (WW-T-700/7 OR QQ-A-225/9 OR QQ-A-200/11) SEAMLESS ALUMINUM TUBE.
MINIMUM ULTIMATE TENSILE STRENGTH = 77 ksi
MINIMUM YIELD TENSILE STRENGTH = 66 ksi
- 3) TOLERANCES ARE PER ASTM B210 AS FOLLOWS:
O.D.: ± 0.008 MEAN (± 0.016 INCLUDING OVALITY)
WALL: ± 0.020 MEAN (± 0.063 INCLUDING ECCENTRICITY)
LENGTH: XXX $+0.188/-0.000$
STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH
- 4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 5) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Abnahmeprüfzeugnis 3.1- DIN EN 10204:2005

Inspection Certificate 3.1 - DIN EN 10204:2005 / Certificat de Reception 3.1- DIN EN 10204:2005

Kunde:

Dart Aerospace Ltd.

Client:

1270 Aberdeen Street
K6A1K7 Hawkesbury, ON Canada

Zeugnisnummer:

1283/12

Cert No.: / No. du certificat:

PO 15344

Bestellnummer:

Order No. / No. de commande

Auftrag:

44987/200

Our Reference/Notre Reference:

Produkt:

Product / Produit:

Rohre nahtlos gepresst

Tubes seamless extruded

Spezifikation:

Specification:

AMS - QQ - A - 200/11; Spezifikation Dart Aerospace D6009

Werkstoff:

Alloy/Alliage:

7075

Zustand:

T 6511

Temper/Etat

Abmessung

Size / Dimension

3,500 INCH x 2,250 INCH x 0,625 INCH x 129,000 INCH

D6009-129 3.500 X 0.625 X 129

Kennzeichnung

Marking/Marquage:

ALUnna - CERT NO. 1283/12 - 7075 - T6511 - CAST NO. 84319 - AMS - QQ - A - 200/11 - 3.500" OD x 0.625"

WALL - HEAT LOT NO. 1401367 - ALUNNA ORDER CONF.NO. 44987/200-1 - PO 15344

Lieferung

Delivered Material / Matériel délivré:

pcs.

lbs

Country of Manufacture: Germany

23

1717

Products are in accordance with applicable RoHS

Elemente ohne Grenzwerte:

einzel max. 0,05 %, insgesamt 0,15 %

1. Chemische Analyse

Chemical Analysis / analyse chimique

Charge/ Cast No.	min. max.	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
		0,40	0,50	1,2 2,0	0,30	2,1 2,9	0,18 0,28	5,1 6,1	0,20					
84319		0,08	0,13	1,52	0,04	2,46	0,18	5,83	0,03	0,01	0,04			0,0001

Hydrogen content: 0,10

ccm/100 g Al Elements without indication < 0,01 %

country of melt manufacturer: Germany

2. Mechanische Eigenschaften

Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) ksi	yield (Rp0,2) ksi	elongation 2" %	elongation A %	Hardness HB	Heat Lot No.
min. max.	77,0	66,0	7,0			
1	87,435	80,330	11,0			1401367
2	86,565	79,315	12,0			

RMS: outside 25 - max. 21,0 µ"

**Ergebnis der
Prüfungen:**

Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

Test results:

We confirm that the delivery has been tested and applies to the agreements made on receipt of the order

Resultats:

Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande

TaschkeD



Certified acc. DIN EN ISO 9001:2008 and DIN EN 9100:2003
valid until 2013-11-10

Cert.- Reg. No.: 001959 QM08; 001959 ASH



ALUnna

Abnahmebeauftragter

18.09.2012

Aluminiumwerk Unna AG, Uelzener Weg 36, 59425 Unna, Germany

EXTRUSION INSPECTION SHEET

		SIDE A	SIDE B					ULTRA SONIC MEASURMENTS				
TUBE #	TOTAL LENGTH	DIA two readings	DIA two readings	INSIDE DIA	wall thickness measured w/vern	Strightness at middle	Rockwell Reading	LOCATION on tube	R1	R2	R3	R4
DWG	129.00"	3.500"		2.250"	0.625"	0.010"	N/A	Middle	N/A			
1	129.00"	3.503"/3.499"	3.506"/3.494"	2.230"	0.638"/0.628"	0.002"	N/A	Middle	0.638"	0.648"	0.639"	0.629"
2	129.00"	3.503"/3.501"	3.505"/3.503"	2.236"	0.647"/0.625"	0.001"	N/A	Middle	0.640"	0.633"	0.637"	0.643"
3	129.00"	3.498"/3.494"	3.497"/3.493"	2.234"	0.636"/0.628"	0.002"	N/A	Middle	0.629"	0.629"	0.645"	0.640"
4	129.00"	3.495"/3.501"	3.501"/3.506"	2.235"	0.629"/0.634"	0.002"	N/A	Middle	0.631"	0.627"	0.642"	0.636"
5	129.00"	3.439"/3.500"	3.495"/3.500"	2.237"	0.625"/0.637"	0.002"	N/A	Middle	0.639"	0.631"	0.636"	0.639"
6	129.00"	3.488"/3.495"	3.498"/3.501"	2.222"	0.622"/0.641"	0.003"	N/A	Middle	0.645"	0.633"	0.634"	0.650"
7	129.00"	3.488"/3.494"	3.494"/3.498"	2.230"	0.628"/0.639"	0.005"	N/A	Middle	0.629"	0.629"	0.637"	0.644"
8	129.00"	3.494"/3.501"	3.499"/3.501"	2.234"	0.626"/0.637"	0.001"	N/A	Middle	0.637"	0.642"	0.638"	0.636"
9	129.00"	3.496"/3.497"	3.499"/3.506"	2.228"	0.617"/0.666"	0.006"	N/A	Middle	0.627"	0.640"	0.653"	0.636"
10	129.00"	3.494"/3.497"	3.497"/3.501"	2.232"	0.625"/0.634"	0.001"	N/A	Middle	0.636"	0.634"	0.642"	.0641"
11						0.003"	N/A	Middle				
12						0.008"	N/A	Middle				
13						0.003"	N/A	Middle				
14						0.001"	N/A	Middle				
15						0.001"	N/A	Middle				
16						0.003"	N/A	Middle				

17					0.001"	N/A	Middle				
18					0.002"	N/A	Middle				
19					0.002"	N/A	Middle				
20					0.003"	N/A	Middle				
21					0.002"	N/A	Middle				
22					0.001"	N/A	Middle				
23					0.002"	N/A	Middle				
PART # D6009-129		P/O# 15344			BATCH # 75627			Notes:			